garden cuttings

a monthly newsletter for the discerning gardener

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Plants that merit attention

The heading I have borrowed from an article in an American horticultural newsletter that caught my eye the other day.

The article describes a project of the Horticultural Committee of the Garden Club of America to find worthwhile species, cultivars and hybrids of trees, shrubs and ground covers that are not generally available for garden and landscape use. The programme 'responding to the crucial need for greater diversity of available plant material' will apparantly focus not only on aesthetic qualities but also on tolerance to increasing environmental stresses.

The article then goes on to quote Charles Lewis, of the Morton Arboretum - and his remarks are almost equally applicable to this country - "The range of plant materials now available is limited to the listing of the nursery industry. However, in all regions of the country there are institutions and individuals who have experience with a wider range of plant material. Each knows of plants which grow well, have desirable characteristics and are suited to their particular regions, and yet are not available for planting. Through this project, the Garden Club of America will provide a forum for the assembly and dissemination of information of these preferred plants".

In addition to the 14,500 members of the Garden Club of America all individuals, nurseries and horticultural institutions are urged to join in the project. The Committee will publish a manual of 'Plants that merit attention' to bring to the attention of growers and consumers alike an expanded list of superior plants which are particularly suited to specific environmental conditions.

In the same issue of this newsletter is the notice about a nurseryman, specializing in fruits, who is adopting a similar approach. He is advertising "Wanted - domant, pencil-thick cuttings of exceptional or unique edible-fruited trees, bushes or vines, including apples. Send 8 to 10 inch scion wood when you prune this spring, also descriptions and history. I am starting a nursery and looking for new genetic material. In exchange I will send you my list of nursery stock with discount coupon".

Is it too much to hope that a co-ordinated project along these lines might one day be undertaken in Australia?

TIM NORTH

Old trees saved by the surgeon's saw

The gardens of three properties being conserved by the Heritage Council contain trees and shrubs of historic, horticultural and aesthetic significance. Old age and, in some cases, years of neglect have combined to threaten the survival of these important items of our heritage.

Now, with the assistance of Mr Phil Hadlington, forest entomologist with the Forestry Commission of New South Wales, and two graduates of Mr Hadlington's tree surgery course, Chris Bradley and Dick Ottoway, these old trees and shrubs are being given new life and can look forward to many more years of growth.

At Elizabeth Farm, Parramatta, there are several trees dating from the early 1800s when Elizabeth Macarthur took a strong interest in the garden. Two fruiting olives *(Olea europaea)* which are possibly the oldest trees planted in the colony were in a sorry state, with many dead limbs and cavities. After removing all dead wood and filling the cavities with urethane foam, a programme of fertilising and watering was carefully followed. As a result, the olives are now thriving and have produced their first crop of fruit for about 20 years.

Large specimens of kurrajong *(Brachychiton populneum)* and Chinese Elm *(Ulmus parvifolia),* also dating from the Macarthur period, have received treatment, including the removal of nearby self-sown camphor laurels which were interfering with their growth.

The tree surgery work at Elizabeth Farm was recently shown on the Channel 10 children's television programme 'Simon Townsend's Wonder World'.

The garden at Rouse Hill House on Windsor Road, Rouse Hill, is one of the most important colonial gardens surviving in the state. Its original four-square layout with brick-edged paths survives intact and the garden contains many interesting specimens of trees and shrubs.

A magnificent lemon-scented gum *(Eucalyptus citriodora)* dating from late Victorian times has been treated for a borer infestation which threatened its graceful shape.

One of the most striking trees in the garden at Rouse Hill is a carob *(Ceratonia siliqua)* which is naturally developed into an almost perfect cascade shape so prized by Bonsai enthusiasts. Careful removal of a broken limb on the tree was carried out to protect this unusual specimen.

'Bella Vista' at Kellyville sits on a hilltop site between Windsor Road and Old Windsor Road and can be easily identified by its magnificent row of Bunya Pines *(Araucaria bidwillii)* and several large Moreton Bay Figs *(Ficus macrophylla)*.While research and survey of the garden and landscape at 'Bella Vista' is continuing, treatment of several old rose bushes in the front garden has already yielded results. Careful pruning to remove dead wood, followed by weeding and mulching, has produced vigorous new growth and blooms.

With tree surgery and a comprehensive programme of maintenance the old trees and shrubs at Elizabeth Farm, Rouse Hill and 'Bella Vista' should survive for many more years as an important part of our environmental heritage.

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The case of the disappearing bush rock

In the past ten years the drain on bush rock from the bush and into suburban gardens has accelerated, particularly in the Sydney region.

Bush rock is any naturally weathered stone that lies on the surface. In the Sydney region there are sections of horizontally bedded sandstone that have eroded into surface fragments. This rock is an integral part of the environment and both plants and animals have adapted to these habitats. Bush rock protects the soil from drying out and provides a regulating barrier against sudden climatic change for the soil beneath it. Because of this moisture retention effect seeds are more likely to germinate near rocks in dry conditions.

Small mammals, reptiles and insects seek the shelter of rocks, so that when bush rock is removed from a bushland environment it will have a dramatic effect on those animals, and in turn on the animals which predate on them.

Bush rock also plays a significant role in providing a refuge for animals caught in bushfires. After a fire, bush rock also acts as a soil protector. The numerous small barriers it creates impedes water runoff and thus reduces erosion. Seeds and debris tend to build up around these barriers, and in time this material breaks down into a mulch which helps the re-establishment of flora and fauna communities.

In the Sydney region the damage caused by bush rock collectors is quite extensive. Good material is becoming scarce and the collectors have to travel long distances. Many of these hold licences to collect bush rock from vacant crown land, but a number do not restrict their activities to these defined areas. Moreover there appears to be little restriction on the number of licences issued and very little effort made to stop illegal operators.

Both landscapers and the general gardening public should be aware of the environmental consequences of using bush rock. Numberous acceptable alternatives are available - stone flagging, sawn stone, railway sleepers, timber logs, bricks, even quarried rubble. Quarried rubble and stone flagging can be made to lose their 'newness' by minute applications of natural ochre, and to accelerate the weathering of fresh stone a judicial application of watered milk on wet stone encourages microscopic growth to form. Well rotted manure or compost rubbed into the stone will also promote moss and lichen growth, while wet eucalypt leaves left on the surface will significantly stain the rock. Other little tricks are to sprinkle wet pine sawdust and wet iron filings onto fresh stone.

(adapted from an article by Fred Hersey, senior ranger N.S.W. N.P.W.S., in The Australian Ranger Bulletin)

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English gardens No. 4

HUSH HEATH MANOR, GOUDHURST, KENT

Hush Heath was built by a master weaver in 1534; the garden, of some three and half acres, was laid out shortly before the last war by a Mr Bower, who managed a happy blend of English and Italian styles, of the English traditional border, rose garden and topiary with the Italian detailing of urns and statuary. To quote Peter Coats "Mr Bower spent his winters in Italy, where he obviously drank deep of the Chianti of Italian culture; for he planted an avenue of slender yews which recalls Frascati, built statued terraces which might overlook Fiesole, and designed and planted a circular hedge of castellated and pinnacled Cypress which surely must be unusual anywhere".

The gabled and timbered north facade of the house overlooks a wide lawn studded with topiary. An encircling bank is mounted by stone steps which lead to the circular enclosure formed by the castellated Cypress hedge. From here an avenue of yews stretches nearly a hundred metres to a marble statue of a veiled woman. To left and right are beds of azaleas, parterres of old roses, and bold groupings of lilacs; many of the roses are growing up and through old apple trees.

Near the house stand two fine Italian Cypresses, some ten metres in height, and a fine Weeping Willow, *Salix x chrysocoma.* A dell lies to the south-east of the garden, with a central pool planted with Astilbes, Rodgersias, Gunnera, Japanese Irises and bold groups of Hostas. Nearby is a croquet lawn bordered on two sides by banks that are planted with shrubs selected for their foliage - like *Senecio greyii, Skimmia japonica,* red Berberis, Eleagnus and *Ruta graveolens.*

One can leave the main garden and cross into an old world kitchen garden, where an unusual feature is the selection of old shrub and climbing roses trained up tripod 'wigwams', and edged and interplanted with chives.

Hush Heath is now owned by Dr and Mrs Stanley Balfour Lynn.

(see our English Garden Tour itinerary in August 1982 issue)

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PART OF MARGOT LEWER'S GARDEN

The Lewers art gallery

Gerald Lewer's sculpture and Margot Lewer's abstract paintings are represented in State Art Galleries throughout Australia, and in private collections in many countries of the world.

In 1951 they bought a property on the banks of the Nepean River at Emu Plains, between Sydney and the Blue Mountains. it had been a pig farm; there were no trees, no garden, but it became their home and work-place. More than that it became a meeting place for artists - Patrick White once described it as 'one of the focus points in our still tentative civilization'.

In 1962 Gerald Lewers met an untimely death in a riding accident. Margot remained at the house, working incessantly until she, too, died, in 1978. One of her lasting achievements was the planning and planting of the garden around the house. This thankfully, has been preserved intact, and is to-day one of the main features of this remarkable complex.

It was Margot Lewer's wish that the whole property and the extensive art collection within it should become the property of the Australian people. In 1980 Penrith City Council took over the responsibility for running it. With a substantial grant from the State Government a new and modern Art Gallery was built. This is now the Regional Art Gallery, while the old family home has become the Lewers Gallery, focussing on the work of Gerald and Margot Lewers. A third building, designed by Sydney architect Sydney Ancher shortly before Margot's death, is now a conference or exhibition hall.

The Lewers Bequest and Penrith Regional Art Gallery, to give it its full name, won the Museum of the Year Award in 1982. Within the complex a full programme of activities related to the visual, graphic and performing arts is carried out throughout the year.

Much voluntary work in organizing these events and ancillary functions is undertaken by a Friends organization. The joining fee to this is $2, plus an annual subscription of $5. Enquiries can be sent to the President, Mrs I. McSweeney, 9 Alexandra Crescent, Glenbrook, N.S.W. 2773.

The Gallery is open from 11 a.m. to 5 p.m. from Thursday to Sunday. Admission fee is $1. The address is 86 River Road, Emu Plains, and the telephone number is (047) 35-1448.

Planting and care of tree ferns

Many tree ferns are sold through commercial outlets in Australia, and the number being sold is inceasing dramatically. In South Australia alone, numbers have increased over a five-year period from around 300 to over 21,000 per year. Reports in that State estimate that about 80% of these plants are dying. Further studies have shown that deaths were not caused by the poor health of the plant or any other reason which could be associated with the commercial outlets but was due in most cases to poor siting and a lack of knowledge of planting, watering and maintenance procedures. The majority of plants sold have come from bush areas and most States have a licensing system to enable controlled collection from State Forests. In the interests of conservation, we want to save the many thousands of plants that die needlessly each year and also save you money.

Most of tree ferns sold are of the species *Dicksonia antartica* but some are Cyatheas, namely *C. australis* and *C. cooperii.* It is important to know the species of fern purchased as they require somewhat different treatment in planting. Identification of ferns can be difficult but it is not hard to differentiate between the three mentioned above.

The simplest technique is to consider the scales or hairs at the base of the fronds. *Cyathea* species have frond bases covered with flat, soft, flakelike scales of light to golden brown mixed with soft hair, whilst *Dicksonia antartica* has no scales but a liberal coating of fine red-brown hairs. Of the two common Cyathea species - *C. cooperii* sheds its dead fronds leaving a clean scar on the trunk while with *C. australis* the frond bases persist on the trunk giving rise to its common name of 'Rough Tree-fern'.

Purchasing: When purchasing your tree fern, choose a healthy plant, free from damage and without signs of insect damage. As the sale of tree ferns in most States is controlled by license, purchase only those plants that have a license tag giving the license number.

Siting: The siting of your plant is most important, and it is essential to simulate its natural growing conditions as closely as possible.

Tree ferns desire shade and an ample moisture supply with, however, good drainage. Protection from wind is important, particularly from hot, drying westerlies. It is often said that *Dicksonia antartica* is frost hardy, however all tree ferns can be affected by frosts which may kill the fronds but the plants recover.

Planting and Cultivation: Large specimens of most species can be successfully transplanted if a reasonable portion of the root system is collected and fronds trimmed back to reduce transpiration. Remember, however, that all species are on the list of protected plants and should not be removed from the bush.

As a general rule *Cyathea* species are more difficult to transplant. *Dicksonia antartica* stumps are commonly sold in nurseries and usually the trunk is sawn through at the ground level with no root system. These species transplant quite readily this way with the trunk being placed 15 to 20 cm into the soil. To move *Cyathea* species a large root bowl must be taken with the trunk and root disturbance should be minimal.

If your soil is heavy the area should be dug over and river sand, peat moss or other organic matter incorporated into the soil. When planting *Dicksonia* sp. place ⅓ of the trunk into the ground. For rooted specimens, however, replace in soil to the original depth and thoroughly water in. New roots will soon form. White these are establishing, the plant should be watered at least twice daily. The best time to plant your tree fern is in the early spring when danger of frosts is over.

Watering: When watering your tree fern, particular care should be taken not only to water the base of the plant, but to water the crown also. (The crown is where the fronds of the fern form before unfolding). One popular method of watering during establishment of the plant is to attach a hose that is running at a slow but steady drip into the crown of the plant. Follow-up watering is essential, particularly during warm weather.

Fertilizing: Fertilizers can be used and an application of one of the liquid fertilizers during the growing season helps the vigour of the plant.

Be very careful of over-application of fertilizers. Remember to use only a little now and again and refrain from use in late autumn as new growth can be burnt by frosts.

Insect Pests & Disease: Very few pests affect tree ferns. One that does occur occasionally is a species of scale. This looks like a small brown bump underneath the fronds. However it should not be confused with the spore containers which contain the spore (seed) of the tree fern. The simplest way to distinguish this pest is to crush a few, and if a brown sticky substance remains on your hands it is most likely scale. If your plant is suffering from scale attack it will invariably show a lack of health in the fronds and quite often ants will be seen crawling over the plant. Control can be carried out by removing the affected frond at the base or, if the scale is more widespread, by an application of malathion and white oil at the manufacturer's recommended rate. Always remember to take extreme care when handling garden chemicals.

(REPRODUCED FROM A PUBLICATION PREPARED BY THE SUTHERLAND GROUP OF THE SOCIETY FOR GROWING AUSTRALIAN PLANTS.)

Fuchsias for continuous flowering

by Deborah Law

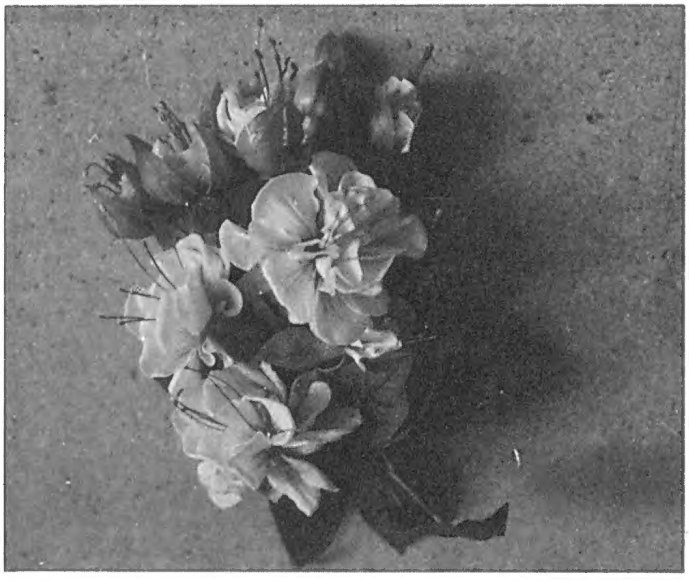
On the market are some beautiful Fuchsias, grown especially to suit our climate. They're on sale now and in full bloom! Previously, Fuchsias have been on sale too late and into the Summer, when our sometimes hot, humid weather does not suit their spectacular flowers and tender growth.

Day to Day Care: A good airy position in broken sunlight with protection from winds and frost is essential to achieve the full beauty of these plants. Fuchsias thrive in cool, moist, well-drained soil - their lower leaves may shed and loss of immature flower buds can result if the soil area dries out completely. This dropping of leaves may also occur if the reflected sunlight is inadequate. In both cases, the cure is simple - but do remember, plants are living things like us - don't over-do strong sunlight - they can sunburn, just as we can, when we're not used to it! We also need adequate moisture - but too much - or too often - will make us also feel ill.

Colour, i.e. darkness of the soil is a good indicator of moisture - also the tip of a finger pushed in a little into the soil is a good gauge to check if it is cool/moist - crumbly in texture - rather than quite slimy/wet. Most plants require a good watering once or twice a week, depending on plant size, pot size, soil quality, and weather conditions at that time.

Suggestion - Place pots into the laundry tub and cover to soil depth with water and wait until bubbles cease and drain - or with larger pots, place in shower recess and turn shower on, washing that cruel dust off their leaves at the same time! Allow excess water to drain off and place back on saucers in position. The natural action of a good watering, followed by a good drain, leaches out the harmful build-up of elements that may occur in the limited area of soil in a pot - also, by the natural exchange of minute particles of water to minute particles of air within the soil fibres, enables the plant to grow healthily.

Care Over Summer: By December, these Fuchsias will have passed their best flowering period; also by this time, these plants will have used most of the available plant nutrients in the existing soil mixture, causing the Fuchsias to become semi-dormant. In our climate, it is wise to make full use of this partially dormant



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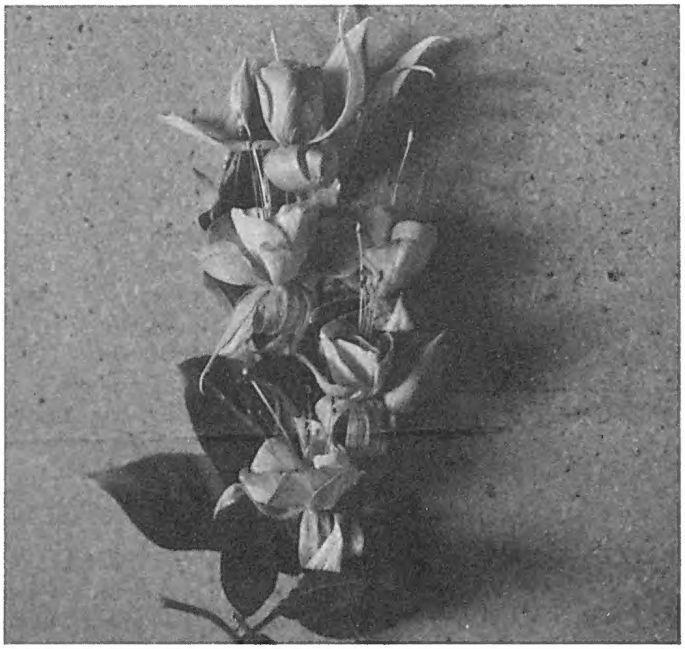


'PARTY FROCK'

period - letting the plants rest by not putting out soft fresh growth in these hot months. Help them by keeping just moist.

Although water will be required probably more often because of the heat, do be careful not to allow them to remain soggy/wet - on the other hand, do not allow the Fuchsias to dry out fully, i.e. a gentle 'hardening off' time.

Repotting and Pruning: At the end of February when most of the humidity has left us, prune severely down to the last pair of leaves on each stem. Repot into an open 'friable' mix (suggestion: adequate pine bark and/or mulch in your soil mix to keep it 'open' and friable at all times). Fertilise the repotted plants with 3-4 month controlled-release plant food or 'blood and bone', then water thoroughly.

When fresh shoots appear and grow to 4 leaves, pinch out the tips to encourage plenty of side laterals - remembering that Fuchsias flower on fresh growth - so the more fresh branches, the more flowers and a more robust plant. Most varieties will flower in approximately 6 weeks after the final pinching-out has shaped the plant.

Maintain adequate moisture and remove old flowers and seeds.

Providing Fuchsias are grown with a little care, they are one of the most satisfying plants to grow, delighting the grower with flowers throughout the entire late Autumn/Winter months, through until Summer. An added application of fertiliser is required by these plants in approximately June-July.

Placed in a crystal or glass float-bowl, Fuchsias make an extremely long lasting cut flower or, picked fresh and placed directly on the table - a delightful 'no-spill' arrangement for that special dinner!

Varieties:

Dainty and Small: Rose Bud - Lord Byron - La Campanella - Derby Imp.

Basket: Dark Eyes - Indian Maid - Pink Marshmallow.

Large Doubles: Tuonella - Voodoo - Lisa - Harbour Bridge.

Semi Doubles: Party Frock.

Elegant Singles: Pixie - Collossus - Crinolin.

La Mortola, Ventimiglia, Italy

La Mortola is one of the most favoured sites on the Italian Riviera. It consists of a promontory, about one hundred acres in extent, shaped like a cone standing on its point. The northern boundary is a stretch of the Corniche which winds its way tortuously along this part of the Riviera coast. A few yards to the West is the present-day frontier between Italy and France.

From this boundary it descends a hundred metres to the sea. Across part of it runs a bridge which was part of the Via Aurelia, an ancient Roman road, and a tablet records the names of famous people who have crossed it: in 1309 a Pope passed there on his way to set up court at Avignon, so did Catherine of Sienna on her way to persuade his successor to return to Rome; the last name to be recorded is that of Napoleon.

It became the private garden of the man who, in 1903, gave the Royal Horticultural Society the money with which to buy Wisley - Sir Thomas Hanbury. Sir Thomas was a Quaker businessman who made his fortune early in life by trading in cloth with the Far East. He found La Mortola on his way home from Shanghai in 1867. On the promontory stood a ruined palazzo where, it was said, Machiavelli had once stayed.

Sir Thomas had a dream of establishing a great Botanic Garden. With the help of his brother Daniel he rebuilt and enlarged the ancient palazzo in the Victorian Italianate style that was popular in parts of London at that time. The two brothers laid paths, with many flights of steps to negotiate the steep descent to the ocean. Their main objective, however, was the 'acclimitization of plants' and it was not until the wife of Thomas's son came out that the garden was given its present structure. Avenues of cypresses were planted, great retaining walls were built, vantage points down the steps became belvederes and the massive job of planting this large and precipitous area really got under way.

The planting was on a monumental scale and of an almost unbelievable richness. In the 1930s a regular event was the publication of a list of plants in flower every New Year's Day (mid-winter in the Northern Hemisphere!) This list grew to nearly four hundred names. In 1938 the Oxford University Press published a catalogue of the plants grown there - it ran to nearly seven thousand species. Seeds were collected and distributed to botanical institutions around the world, and a student exchange scheme operated with Kew Gardens. The dream of its founder was fulfilled.

But the Second World War took its toll; shells fell on the garden and a good deal of damage was done. After the war the garden fell on hard times; it had become almost impossible to maintain as a private garden without financial assistance. In 1960 the Ninth International Botanical Congress, then in session in Montreal, passed an emergency resolution urging the Italian Government to acquire it and operate it as a national botanic garden.

A compromise of sorts was arrived at, by which the responsibility for restoring and maintaining the garden was taken over by the Faculty of Botany of Genoa University, and the Italian Government was to provide the funds. Far-reaching plans were drawn up, and for a time it seemed that La Mortola once again faced a bright future.

The best laid plans, however, seem to have fallen foul of bureauocratic muddling. According to the last report a fallen pine cannot be moved because there is no petrol for the chain saw, which doesn't work anyway; the herbarium has been closed for years and mice are eating the specimens; there is no fuel to heat the greenhouses; an architect was employed to supervise the installation of new reservoirs and hydrants, but there are still no pipes to connect the two; the gardeners were told that they must become public servants, but at the same time most of them are debarred from doing so because they are over 35! The future now looks bleak.

La Mortola is a garden of great complexity. It was once, not only one of the great gardens of the world, but also a botanical institution of a high order. It still contains the finest collection of sub-tropical plants in the Mediterranean area. It will be a great pity if the ambitious plans for its restoration and its reopening to the public are brought to no avail through government bungling.

A hardy Banksia

by Neville Bonney, South Australia

When most of us want to plant a Banksia, we are often attracted to some of the more spectacular forms found in Western Australia. However, some of these species while they are brilliant in colour, are sometimes not easy to grow in Eastern Australian gardens.

Do not be disillusioned that you cannot grow Banksias. Spare a thought for some of those that may grow near you. For example - *Banksia marginata* - 'the Silver Banksia' - which has a wide distribution in South Eastern Australia from North Eastern New South Wales coming south into Victoria and around into South Australia as far west as Port Lincoln. It is also wide spread in Tasmania and adjacent islands. This Banksia is ideal for the following reasons -

a) It has the ability to grow in most soil types from coastal to inland - standing a wide range of pH from 5 to 8.5.

b) It is strong in the wind, flowers annually with many hundreds of blooms found on adult plants.

These Banksias can grow from small shrubs found in poorer soil types up to 10 metres in more favourable soil types. The tree can sometimes sucker but the plants are usually fire sensitive - unlike a lot of other Banksia. The seed is shed annually, usually in early autumn.

The flowering period is from late summer and into and during winter. The flowers are yellow in colour and contain a good supply of nectar which in turn attract many of the nectar eating birds - for example - wattle birds, honey-eaters, spinebills, silver eyes, etc.

Seeds can be obtained usually in February/March when fruit becomes a dark brown in colour. These can be collected and placed in a heated area and the valves will open and the seed will fall out. If these seeds are then placed 1/8th under normal potting mix during autumn, seedlings will appear a few weeks later.

Hand-made ceramic tiles

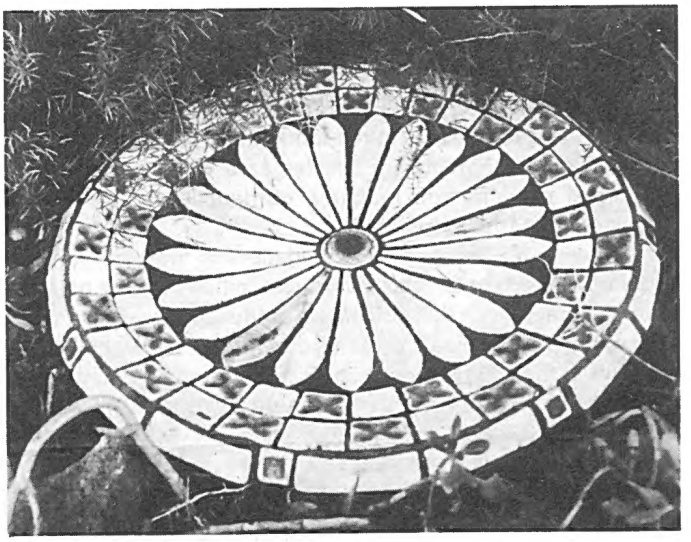
Anna Hamilton has been making ceramic tiles at her home overlooking Pittwater for almost fifteen years. She uses them on tables, bird-baths, planter boxes, as frames around mirrors; she will even tile a whole wall or a front door. Examples of her work can be found in every State of Australia, as well as in the United States, Canada, Great Britain, Spain and Malta.

Anna uses a lot of molten coloured glass in her tiles, and this gives them a marvellous crystalline quality. The colours are superb - deep glowing reds, fiery oranges, golden yellows, deep sea greens and blues. They are formed into intricate and artistic patterns with mathematical precision. 'Unique' is a rather overworked word, but Anna Hamilton's work can be described as unique; it is certainly very, very beautiful.

Her bird baths, which vary in size from 18 inches in diameter up to 32 inches - or even larger for a special order - will be a feature in any garden. Prices are from $60 upwards.

Perhaps her most spectacular, as well as most practical, creation is her 'kebabecue' - she prefers this word to the more mundane 'barbecue'. This is a circular table to seat eight people with comfort, on a central column, the top half of which forms the fire pit. The whole table is decorated with tiles, and when not in use a tiled lid fits over the hole in the centre. Kebacecues range in price from about $750, plus freight charges, and take about a month to complete. The exact pattern and colouring of every article is discussed with the client before work is commenced.

Examples of Anna's work can be seen by appointment at her home. In addition certain selected items can be seen at the Hargrave Gallery, Hargrave Street, Paddington, N.S.W., at



Studio Three, also in Hargrave Street, and at Florian Nursery, 129 Warriwood Road, Warriwood, N.S.W.

A special opportunity of seeing her work, as well as that of other artists, will occur on Wednesday 3rd November (6 pm to 10 pm) and Thursday 4th November (11 am to 3 pm), when there will be an exhibition and sale of paintings and crafts at 3 Pindari Place, Bayview, in aid of the Royal Alexandra Hospital for Children's Cancer Fund. Admission will cost $10 on the Wednesday evening, to include supper, and $2 on the Thursday (or $5 with lunch included). Tickets will be available from Les Bovang on (02) 982-6082 (business hours) or (02) 451-3725 (after hours) or from Sue Marker on (02) 939-2052 (after hours).

ANNA HAMILTON

HAND MADE CERAMIC TILES

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KEBABEQUES
FOUNTAINS
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The nature of variegation

Variegation, that is the occurrence of patterns on the leaves of plants due to differences in the amounts of chlorophyll, may be natural and a character of species as a whole, or it may be abnormal, resulting from mutation, nutrient deficiencies, or even infection by certain viruses.

An example of natural variegation is the annual plant *Euphorbia marginata,* which produces heads of white margined leaf-like bracts, with the variegation gradually spreading over the rest of the plant. Colour pigments other than chlorophyll may be present in the leaf pattern, as in Amaranthus and Coleus, which provide examples of the development of pigment patterns by breeding and selection. Another kind of variegation which occurs naturally is the presence of silver markings, as in *Pilea cardieri* and *Lamium maculatum;* these have been found to be due to blisters or air pockets beneath the surface tissues. Many plants showing this type of variegation are shade lovers, so it may be that the air-blister character has evolved as a result of the need for a greater air-exchange between the leaf tissues and the atmosphere in the shade and humidity of their natural habitat.

Abnormal variegations arising from nutrient deficiencies usually take the form of marginal or interveinal chlorosis, though purple or red tints may occur in some deficiences. These variegations are transient and disappear then the deficiency is corrected.

Mosaic viruses may be responsible for some variegations, as in some forms of Abutilon; this is analagous to the 'colour breaking' in the flowers of some tulips and irises. Other viruses are called 'vein-clearing' viruses, and cause the veins to be bleached white or yellow; the cultivar name 'reticulata' is sometimes applied to plants affected in this way, i.e. *Lonicera japonica aureo-reticulata.* These viruses should be regarded as desirable viruses and affected plants are propagated vegetatively for the colourations they produce. They do not noticeably reduce the vigour of the plant; they are either not easily spread by natural means, or if they are, affect only related species.

Most variegated plants grown in gardens, however, arise from mutations, in which the chloroplasts in the leaves lose the ability to produce chlorophyll. This starts with a single chloroplast in a cell at the growing point of a shoot; these mutant chloroplasts then become duplicated many times over until, eventually, cells containing only this kind of chloroplast may occur. This may lead to the production of totally white stems and leaves which, because of their total lack of chlorophyll, will die out. Growing points which consists of a mixture of green and white cells arranged side by side will produce green and white striped leaves and stems. These are referred to as sectorial chimaeras, the word coming from Greek mythology and meaning a monster formed from two or more dissimilar beasts.

These sectorial chimaeras may produce leaves and shoots which are green on one side of the plant and white on the other, or leaves which are half green and half white. However, they always have a very unstable pattern of growth; if they are to be kept going, any wholly green shoots must be pruned out.

From time to time chimaeras may be produced in which the green and white cells are arranged in layers. These are called periclinal chimaeras, and this arrangment is a very stable one; hence the plants in which this occurs have considerable value as garden plants. If you think of the outer layers as the skin and the inner tissues which they enclose as the core, a green skin enclosing a white core will produce leaves with a broad green margin and a white centre (in fact the centre may appear gold due to the overlying areas of green cells). The reverse arrangement is more common, with white margined green centred leaves. The white margin will vary in width according to the thickness of the 'skin', hence there may be more than one variegated form of the same plant.

Because white tissue is non-nutritive, variegated leaves are always smaller than their green counterparts, and as a result of the uneven growth rate of the two layers of cells are often puckered, or buckled. Occasionally the green tissues break away from their constricting white ones and as it is said, 'revert to type'. Some plants show a greater tendency to revert than others.

Golden or yellow leaved plants result from a partial loss of chlorophyll. Golden tissues may also occur with green or white as separate layers, as in Bowles Golden Grass, *Milium effusum aureum.*

Variegated chimaeras do not breed true from seed, and must therefore be propagated by vegetative means. However, it is not possible to raise them from leaf or root cuttings, since the adventitious buds which arise on these tissues are derived from the core cells, and the shoots which develop will not have the dissimilar outer layer.

There is one other form of variegation which produces flecks or stripes of white, more or less regularly distributed throughout the plant. The mutations which give rise to these are often repeated over and over again, and will often breed true from seed as long as the flowers are self-pollinated, or pollinated with other variegated froms of the same species.

(Source: J.K. Burras; Jnr. R.H.S. Xc1X, pt 10, Oct 1974)

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Two new seed collections

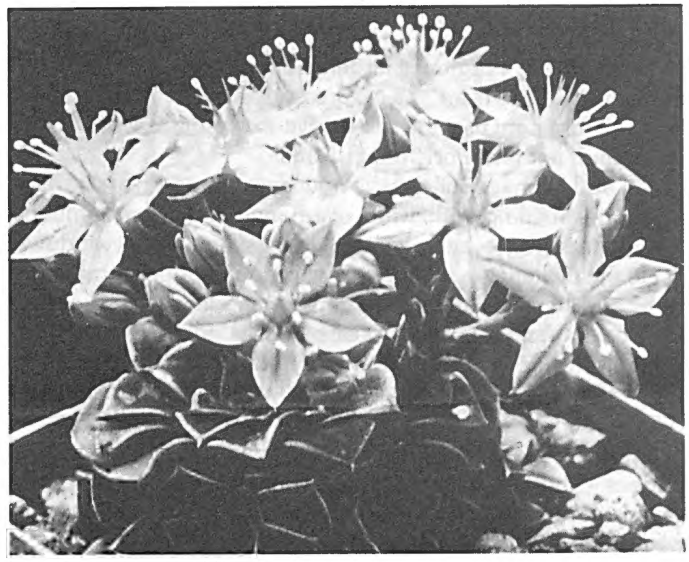
Thompson & Morgan are introducing two new - and quite different - seed collections this spring.

The first is the 'Simplicity' collection - simplicity meaning in this context 'easily grown, flowers where sown'. It's a fair assumption, therefore, that this is a beginner's collection, which is a sense it is, but it's also very far from being just another collection of everyday plants. It comprises some very interesting, and some not so common, plants that may well interest a good many experienced gardeners. For example there's Crepis rubra, or Hawk's Beard, a marvellous little annual that produces an amazing number of shining shell-pink flowers; it's good value in a rockery or as edging plant. Then there's Agrostemma cithago 'Milas', a new Corn Cockle, dwarfer and more compact than the type; Chrysanthemum coronarium 'Golden Gem', and an improved strain of the annual Hibiscus, H.trionum, called 'Sunnyday', in which the flowers belie the common name of 'Flower of the Hour' as they can last all day; there's also a new double-flowered Portulaca called 'Cloud Beater' that, as it's name implies, does not close when the sun goes in, an old favourate in Silene starski, or Ragged Robin, Salvia horminum in mixed colours, and a giant Shasta daisy, Chrysanthemum maximum 'Polaris', with large single white flowers and a strongly branching habit.

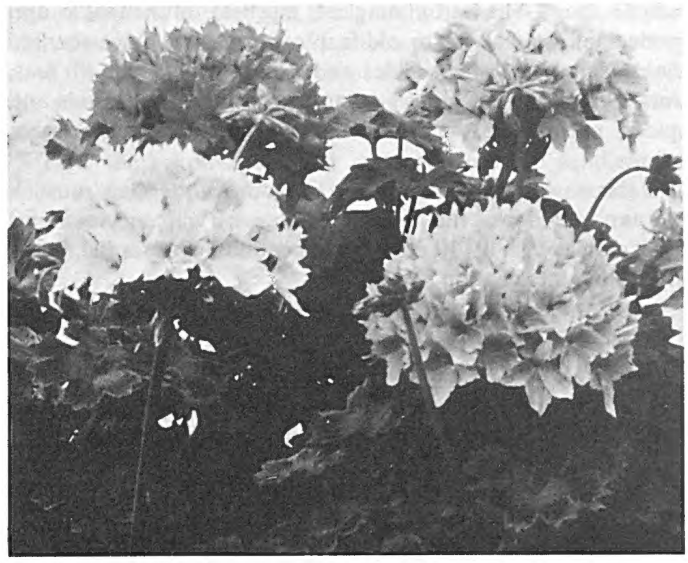
The second collection is called the 'Elite' collection, and consists of some rare plants and some new introductions that have evolved from lengthy breeding programmes. There is a new F1 Carnation called 'The Knight', with fully double flowers on strong stems, a good colour range, and many with real carnation fragrance. There's a new Cosmos - and it's about time Cosmos made a come-back - called 'Candy Stripe', a new perennial Hibiscus called Dwarf Rio Carnival, frost resistant, 60cm in height, with huge flowers that can reach 30cm in diameter. Then there's an interesting new F1 Geranium, 'Startel' (pronounced 'Startle') - interesting because of its unique flower formation; the blooms are ball-shaped, each flower having 4 to 5 petals, each petal being pointed with the uppermost petal divided almost in two and quilled to give quite a startling effect. The foliage, too, is pointed, medium to deeply zoned, with some plants developing striking gold and bronze hues. 'Startel' has been developed from a little known Stellata variety, but after five years of selection, is more compact and branching than the original Australian Stellatas, and the ball shaped heads of bloom have larger flowers, sometimes with 20 to 30 heads on a plant. It will flower in about four months from sowing. 'Startel' promises to be something rather special,but don't be surprised to find that it's expensive - about $4.50 for eight seeds.

Also in the Elite collection are three succulents and a Cactus mixture. There's a frost tender rosette forming succulent from Mexico called Tacitus bellus, or the Chihuahua Flower - a remarkable little plant that produces brilliant magenta-pink flowers in such profusion that the leaves are completely hidden when it's in bloom. There's also a new Sempervivum mixture, and a mixture of Stapelia hybrids - an evil-smelling lot but the flowers are really startling; being desert plants they will grow in the most inhospitable places.

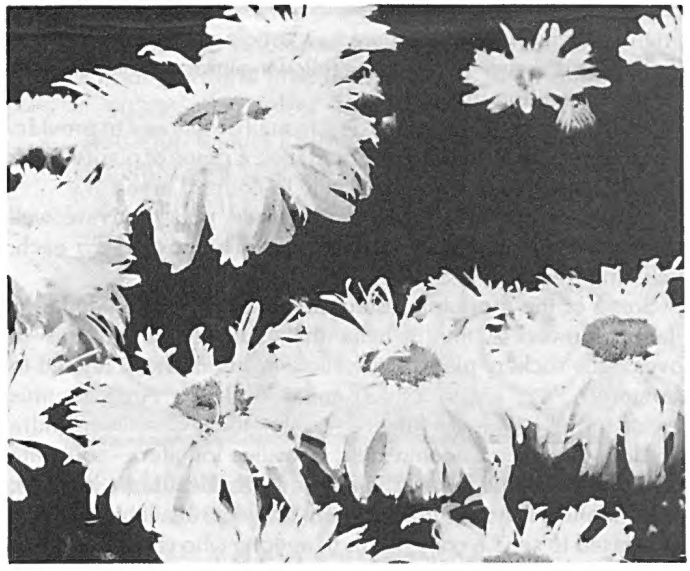
Thompson & Morgan's spring catalogue is available from Erica Vale Australia Pty. Ltd. P.O. Box 50, Jannali, N.S.W. 2226; please enclose 5 x 27c stamps when writing for a catalogue.



THE CHIHUAHUA FLOWER



GERANIUM STARTEL F1



GIANT SHASTA DAISY 'POLARIS'

The Fragrant Garden

To reach the Fragrant Garden from Sydney, you take the Gosford by-pass from the expressway, follow the road to Gosford, turn right past the Erina drive-in cinema, down Terrigal Drive, then left into Portsmouth Road.

Jan and Michael Bailes have now built a mud-brick Gallery - an abode building with wide overhangs and a roof entirely covered in herbs; eventually it will have stained glass windows. Inside the Gallery is a wonderful collection of books for sale, on herbs and herbals, organic gardening, abode building, dyeing and weaving, and some classics on old roses, now extremely hard to find. On the way into the Gallery you pass barrells of pot-pourri mixtures, including a 'sinus mix' - wonderful if you happen to have a cold!

Past the Gallery, and down a winding pathway, are the cottage gardens - the lemon scented plot, the silver garden, Shakespeare's garden, the dyer's garden, poet's corner, the culinary garden, the old roses and apothecary's corner.

The Bailes specialise, so they say - and you will be inclined to believe them - in herbs 'magical, mystical, muncheable and medecinal' as well as in old-fashioned plants, clove-scented pinks, jasmines, honeysuckles and violets. They sell herb teas, pots, herbal oils and flower essences, pot-pourris, sachets and spices, pomanders, hand-made soaps, tinctures, and 'dream pillows'.

If this is what interests you, the Fragrant Garden is a 'must'. If you can't get there, send for their catalogue; it will cost you $1.50 but it's well worth it - 40 pages, and beautifully presented, full of interesting information.

The Fragrant Garden, Portsmouth Road, Erina.
N.S.W. 2250.
Open 7 days a week - 10 a.m. to 5 p.m.

P.S. If you are in a hurry, take the Gosford Helicopter from Mascot, then it's ten minutes by taxi from the Gosford Heliport)

Castlereagh Native Plants

Brian Walters - who contributed an article on Flannel Flowers in our August issue - sends us the following information about his nursery operation in Castlereagh.

The main aim, he says, is to deal in mail orders and to provide, in addition to the 'tried and true' varieties, a range of plants which may be hard to come by, especially in country areas.

All plants are sold in 75mm 'grower' pots, and are well established and ready for planting out. The cost $1.25 each, including freight in N.S.W.

Some of the more interesting plants being propagated are: Flannel Flowers (Actinotus helianthii); Conostylis candicans - a lovely little rockery plant, with yellow flower clusters, related to Kangaroo Paw; Dwarf pink Kangaroo Paw - Anigozanthus flavida forms; Melaleuca fulgens - salmon form; Grevillea Sandra Gordon; Grevillea Coochin Hills; Grevillea longifera - prostrate form; Leschenaultia formosa - various forms; Beaufortia orbifolia;

Mr Walters is now preparing a list of plants available, and will be pleased to send a copy of this to anyone who cares to write to him, enclosing a stamped addressed envelope. The address is Castlereagh Native Plants, R23, Wilchard Road, Castlereagh, N.S.W. 2750. Telephone (047) 76-1360.

The Plant Place, Matcham

Mrs Webb, the proprietor ot The Plant Place, admits that she cannot resist the opportunity of acquiring an unusual plant. So avid a collector is she that some of her acquisitions have yet to be positively identified. The enthusiast, of course, will find this a challenge, while the less enthusiastic perhaps won't mind too much if a specific name here and there is open to question.

These less than common plants are scattered here and there throughout the nursery, among rows of more orthodox nursery lines, but Mrs Webb seems to know the excact location of each one. Here we find a Dombeya; it is labelled *D. dregeana,* but there are some two hundred species of Dombeya, all native to Africa and Madagascar. Most are medium to tall shrubs or small trees, with flowers which, from a distance, somewhat resemble a pink hydrangea, hence the common name of Hydrangea Tree.

There are a number of plants which one normally associates with a more northerly climate, though they will prosper as far south as Sydney if they have a protected position. Here, on the central coast of New South Wales, the climate is mild for most of the year, though the temperature can drop in winter to as low as 4 degrees. Mrs Webb has Poincianas, Allamandas, Quisqualis, some Cassias which are probably hybrids derived from *C.javanica,* and *Buckinghamia celsissima,* a Queensland proteaceous tree that grows to about 10 metres, with cream bottle-brush flowers. Then there is *Thevetia nereifolia,* sometimes known as the Yellow Oleander, a rare N.S.W. bottlebrush, *Callistemon shiressi,* a native Hibiscus, *H.heterophyllus, Schinus terebinthifolia,* which is similar to the better known *Schinus molle,* but generally shorter in stature and with broader leaflets, and the rather neglected native Wistaria, *Milletia megasperma.*

In another part of the nursery is a fine specimen of the uncommon but very beautiful *Camellia rosaeflora* (syn.*rosa plena),* and some *Crinum moorei* - common enough in gardens but hard to find in nurseries.

In the glasshouses the profusion of plants is no less than outside. Of special interest are the hundreds of bromeliads, and no fewer than twenty species of Hoya.

Mrs Webb is an enthusiast, and her enthusiasm is catching. A great many keen gardeners will find this a very interesting little nursery to explore.

The Plant Place is on the Matcham Road, at Matcham, near Erina, N.S.W. 2250.

Plants wanted or for exchange

Mr Gordon Julian, 18 Fromalls Stret, Toowoomba, Queensland, 4350 is seeking the following:

Sedum humifusum
Sempervivum imbricatum
Sempervivum arachnoideum laggeri
Cerastium columnae
Tulbaghia fragrans and T. fragrans alba

Mr A.B. Phillips, Green Toes Nursery, P.O. Box 123, North Richmond, N.S.W. 2754 (telephone (045) 419 3175) is seeking:

bulk quantities of cutting material of
Grevillea 'Robyn Gordon'
Daphne odora
Wistaria floribunda rosea
Pink Bouvardia

The history of the gladiolus

A survey carried out not so many years ago showed that, while the rose was, world-wide, the most popular flower, the gladiolus was, also world-wide, the second most popular (Barry Humphreys, are you reading this?)

The word gladiolus seems to be derived from the Latin gladius, meaning a short sword, and was used by Pliny the Elder in his Historia naturalis, published in the first century A.D. Gladioli were evidently common by the sixteenth century, for John Gerarde in his Herbal, published in 1597, says "we have plenty of them in our London gardens, especially for the garnishing and decking them up, with their seemely flowers".

The two common names used at this time were Corn Sedge and Corn Gladin. The three species grown were *G.byzantinus, G.communis* and *G.italicus* (syn. *segetum*). They all had purplish-pink flowers which would not be popular to-day. The only one of these three Mediterranean species that has survived as a garden plant is *G.byzantinus*. It was not until the end of the seventeenth century that South African species were introduced, and the gladiolus started to become popular. South Africa has about 103 species of Gladiolus, of which 71 are endemic to the Cape winter rainfall region. Only seven of these are believed to have been used in the breeding of our modern garden hybrids; these are *G.cardinalis, G.blandus, G.cruentus, G.natalensis, G. oppositiflorus, G.papilio,* and *G.tristis.*

One of the earliest crosses was between *G.tristis* and *G.cardinalis,* which produced the pink flowered *G.x colvillei;* this later sported to produce a white-flowered form called 'The Bride'. Later *G.cardinalis* was crossed with *G.blandus* to produce a hybrid called *G.x racemosus;* this seems to be the start of that popular group of miniature gladioli now called *G.x nanus,* which have been continuously developed for cut flower production.

The big breakthrough, however, came with *G.natalensis,* which was first crossed with *G.oppositiflorus* in Belgium. The resulting hybrids were then crossed with *G.papilio,* and their progeny had marked lip blotches. Also from this cross came the first 'blue' gladiolus.

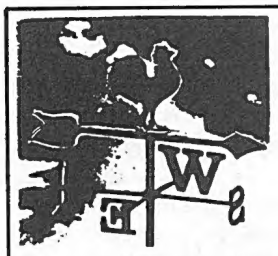
The next step was the use of a yellow hooded gladiolus called *G.primulinus;* this was probably a form of *G.natalensis.* This resulted in a strain of small hybrids with dainty hooded flowers in pastel colours, known affectionately as 'prims'.

More recently the Peacock Hybrids have been produced by crossing *G.x nanus* with primulinus types and the Coronado gladioli bred in Holland.

The U.S. have made one notable contribution - the ruffled gladiolus. The first ruffled flower was produced in 1903 and this has become an American speciality.

Two features are now being bred into gladioli - hardiness, which can only come from the Eurasian species, some of which are alpine meadow plants - and perfume. Perfume has arisen from mutation with several American cultivars, but has also arisen from the plant formerly called Acidanthera, now merged into the genus gladiolus.

There are still, according to the last count, about 180 species of gladiolus to be experimented with.



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Preserving rosebuds

A simple method of preserving rosebuds for mid-winter blooming has long been practised in England. The buds may be picked anytime before frost, the later the better. Fully developed buds showing some colour are selected. Cut with a long slanting slash. Put the cut stems in a box of wet sand, 8 inches deep, with the stems covered almost up to the bud. Store in a cool dark place and keep the sand wet.

Take the required number of buds from the sand, make another slanting cut above the first one and plunge the stems into very hot water, just below boiling point. Allow the buds to remain in this water until it cools.

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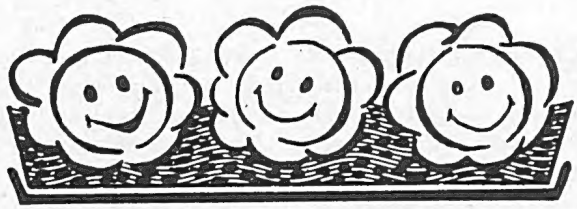

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Mulching under clear polythene film

Research work in Israel, and continued at the University of California, indicates that heat trapped under polythene sheets laid over the soil creates temperatures high enough to kill most disease-producing organisms, as well as many weeds and weed seeds, and to a depth that makes the procedure commercially feasible. It can also be adapted to home garden use.

Clear polythene works better than black, and thickness has been shown not to be critical, except for the fact that thin sheets tear more easily.

The edges are buried so that all the heat generated stays under the sheet. One month is generally enough to give effective control, but research is continuing on which time of the year is best. Also under study is the depth of heat penetration, and the possibility that soil micro-organisms which can tolerate high temperatures may be involved in controlling disease-producing organisms and seeds weakened by the heat.

A new grafting aid

A device called a 'hot-callousing pipe' which surrounds graft unions with heated air is being used in the U.S. to speed up the propagation of fruit trees. The advice consists of a 5cm plastic pipe with 1cm crosswise slits cut into it. A 1cm plastic pipe, filled with water and separating a pair of electric heating cables running parallel with it, passes through the larger pipe. The graft unions are placed in the slots and covered with a strip of foam rubber. The roots of the rootstock are covered with sawdust to keep them moist. At the temperature achieved in this way the graft union is formed in about 21 days.

Indoor-outdoor 'plant walls'

'Moss walls' are now popular in the U.S. These vertical planters consist of an open wooden frame covered with wire mesh and lined with spagnum moss; they are then filled with soil or a soil-less mix and planted with flowers or vegetables on any or all sides as well as on top.

A commercial version, called The Living Wall Garden, offers various styles, all made in fibreglass with numerous planting holes and a built-in drip watering system. Several interesting variations have also been reported. A Californian gardener has built a permanent 'tapestry' wall of tubular steel uprights set in concrete, chain-link fencing and spagnum moss liner. The sunny side of the wall is planted with alyssum, pansies, sedums, lobelia, parsley and ornamental kale, while the shady side features begonias, cinerarias, primulas and grape ivy. A Seattle landscape architect uses black polyethylene film or black shadecloth as a liner and makes holes in it for planting. He has made a spectacular indoor garden 17 feet high under a skylight, by lining an entire room wall with waterproof wallboard covered with sheet metal, then building a moss-lined frame six inches out from it and planting the frame with giant ferns and tropical foliage plants.

Quote of the month

The immortality of marbles and of miseries is a vain small thing compared to the immortality of a flower that blooms and is dead by dusk.

Reginald Farrer

garden cuttings

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